

CLAIMS

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What is claimed is:

1. A method of communicating with a mass storage device, comprising:
  - receiving ATA/ATAPI signals from a mass storage device into a bridging circuit;
  - converting the ATA/ATAPI signals from the mass storage device into USB signals using the bridging circuit; and
  - outputting the USB signals from the bridging circuit.
- 15 2. A method according to claim 1, wherein the bridging circuit is provided in a single, bridging chip.
3. A method according to claim 1, wherein the bridging circuit is provided on a motherboard of the mass storage device.
- 20 4. A method according to claim 1, wherein the bridging circuit is provided on a secondary board.
5. A method according to claim 4, wherein a mass storage device motherboard outputs ATA/ATAPI signals, and wherein the secondary board receives the ATA/ATAPI signals from the mass storage device motherboard and converts them into USB signals.
- 25 6. A motherboard for a mass storage device, said motherboard comprising:
  - input logic configured to receive an input signal from a read unit of the mass storage device;
  - a bridging circuit configured to receive the input signal from the input logic and convert the input signal into a USB signal; and
  - output circuitry configured to output the USB signal from the motherboard.

7. A mass storage device motherboard according to claim 6, wherein the bridging circuit comprises a bridging chip for converting the input signal into the USB signal.

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8. A mass storage device motherboard according to claim 6, wherein the bridging chip comprises:

an ATA/ATAPI interface configured to receive ATA/ATAPI signals from the input logic;

10 a disk interface configured to receive ATA/ATAPI signals from the ATA/ATAPI interface;

a serial interface engine; and

a USB physical interface transceiver configured to receive signals from the serial interface engine and output USB signals to a USB interface.

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9. A secondary board configured to enable communication between a mass storage device motherboard and a host motherboard, said secondary board comprising:

20 a connector port for receiving signals from the mass storage device motherboard;

a bridging circuit for converting signals from the mass storage device motherboard into USB signals; and

25 a USB connector port for outputting the USB signals to the host motherboard.

10. A secondary board according to claim 9, wherein the bridging circuit comprises a bridging chip configured to translate the signals from the mass storage device motherboard into USB signals.

11. A secondary board according to claim 10, wherein the bridging chip comprises a USB physical interface transceiver, a serial interface engine, and a disk interface.

5 12. A secondary board according to claim 11, wherein the disk interface receives ATA/ATAPI signals through an ATA/ATAPI interface, and wherein the ATA/ATAPI signals are converted into USB 2.0 signals and are output to a USB Interface through the USB physical interface transceiver.

10 13. A bridging chip comprising:  
an input configured to receive ATA/ATAPI signals;  
conversion logic configured to convert the ATA/ATAPI signals into USB signals; and  
an output configured to output the USB signals.

15 14. A chip according to claim 13, wherein said input comprises an ATA/ATAPI interface arranged to receive the ATA/ATAPI signals and a disk interface configured to receive ATA/ATAPI signals from the ATA/ATAPI interface; wherein said conversion logic comprises a serial interface engine and a USB physical interface transceiver, said interface transceiver being configured to receive signals from the serial interface engine and output USB signals to a USB interface.

20 15. A chip according to claim 13, wherein the chip is located on a mass storage device motherboard.

25 16. A chip according to claim 13, wherein the chip is located on a secondary board.

30 17. A chip according to claim 16, wherein the secondary board is arranged to receive ATA/ATAPI signals from a motherboard of the mass storage device.

18. A method of converting signals from a mass storage device into USB signals, said method comprising:

receiving a signal from a mass storage device into a bridging chip;

5 converting the signal from the mass storage device into a USB signal;  
outputting the USB signal from the bridging chip.

19. A method of converting signals according to claim 18, wherein said bridging chip is located on a motherboard of the mass storage device.

10 20. A method of converting signals according to claim 18, wherein the bridging chip is located on a secondary board arranged in communication with a motherboard of the mass storage device.

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